CLAIMS

What is claimed is:

1. An apparatus, comprising:

a plurality of display devices, each display device including:

a first substrate and a second substrate;

a plurality of separated pixel elements formed between the substrates, each pixel element having a first antireflective layer formed over a micromirror layer;

a plurality of spacers formed on a portion of some of the pixel elements and positioned in cell gaps between these pixel elements and the second substrate, the plurality of spacers being distributed among these pixel elements in a manner that spacers are absent from other pixel elements and in a manner that provides a substantially uniform thickness of the cell gaps; and

liquid crystal material contained in the cell gaps,

wherein locations of spacers of each respective display device are different relative to locations of spacers on other display devices.

2. The apparatus of claim 1 wherein the spacers are made from silicon nitride.

3. The apparatus of claim 1 wherein at least one display device includes spacers formed on corner portions of a group of pixel elements for that display device.

4. The apparatus of claim 1, further comprising a silicon nitride layer formed over the first antireflective layer, and wherein the micromirror comprises an aluminum layer and the first antireflective layer comprises a silicon dioxide layer.

5. The apparatus of claim 4 wherein the spacers are formed over at least a portion of the silicon nitride layer.

6. The apparatus of claim 1 wherein the spacers have a dimensional width that is substantially smaller than a dimensional width of the pixel elements.

7. The apparatus of claim 1 wherein the pixel elements of the respective display devices comprise pixels to reflect a different respective color, and wherein the spacers are formed in different locations for pixels of each respective display device.

8. The apparatus of claim 7 wherein the different respective colors comprise red, green, and blue.

9. The apparatus of claim 1 wherein some of the spacers are each formed on a single pixel element.

10. An optical projection system, comprising:

a plurality of display chips, each of the display chips including:

a silicon substrate and a glass substrate;

a plurality of separated pixel elements formed between the substrates, each pixel element having a first antireflective layer formed over a micromirror layer;

a plurality of spacers formed on a portion of some of the pixel elements and positioned in cell gaps between these pixel elements and the glass substrate, the plurality of spacers being distributed among these pixel elements in a manner that spacers are absent from other pixel elements and in a manner that provides a substantially uniform thickness of the cell gaps; and

liquid crystal material contained in the cell gaps,

wherein locations of spacers of each respective display chip are different relative to locations of spacers on other display chips.

11. The system of claim 10 wherein the display chips comprise liquid crystal on silicon (LCOS) light modulators.

12. The system of claim 10 wherein the spacers are made from silicon nitride.

13. The system of claim 10 wherein at least one display chip includes spacers formed on corner portions of a group of pixel elements.

14. The system of claim 10 wherein the spacers have a dimensional width that is substantially smaller than a dimensional width of the pixel elements.

15. The system of claim 10 wherein the pixel elements of each respective display chip comprise pixels to reflect a different respective color, and wherein the spacers are formed in different locations for different display chips.

16. The system of claim 10 wherein some of the spacers are each formed on a single pixel element.